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Though Monckton reports (1921) a few large villages in the early post-contact period, it is only recently, in response to Australian pressure, that multi-clan villages, with populations ranging from 100 to 500, have become common. Most of the plantations found in the Northern district have been established by Australian ex-servicemen supported by government loans. A number of Orokaiva have been drawn to work on these plantations, others to jobs in Popondetta, others again to service with the police, the armed forces or employers outside the district. Such migration has substantially reduced the proportion of the male village population group.[2]

2. *Technology and Aesthetics*

We possess only the briefest description of Orokaiva industry (in Williams 1930). Although I did collect additional data, the traditional technology has been transformed to such an extent that my data must needs be fragmentary. The only axes and adzes now in use are made of steel; most of the various stone-made cutting tools described by Williams are no longer in use, being replaced by the ubiquitous bush knife wielded by young and old, male and female. One exception is worth noting, if only to emphasise an element of continuity: cockle shells are still used for the scraping of coconuts and for the shaping and decorating of pots. Most of the needles used by women are still made of flying fox bones (*poma*), even though a few needles have at times been obtained from the Mission. While files for sharpening tools are necessarily made of steel, rough leaves still serve as tools for scraping pots, smoothing down wood, etc. The same mixture in the use of basic tools is found in agriculture, hunting, and fishing: we still find the digging stick but also the axe; traditional hand nets and fishing spears (with steel tips), but also snorkels. For hunting, traditional devices have been almost entirely replaced by the shot gun. The old technology is still basically intact in those few industries which are directly related to ceremonial life: the making and decorating of loin cloths, feather headdresses, ceremonial weaponry, musical instruments such as drums. Certain other specifically feminine artifacts (mats, baskets, string bags) are still produced and in use, while much of the contemporary Orokaiva house-building technology is traditional, Fine wickerwork for ceremonial objects (armlets, spear decorations, etc.) is still made by some of the older men. Orokaiva women have almost stopped making pots, though this was an important industry in pre-contact times. While trade goods are used for everyday purposes, such pots as are still made serve as gifts to women at the time of marriage. They are kept for sentimental reasons, but we were able to see only very few.

An everyday Orokaiva meal consists of taro, often with a few vegetable condiments: coconut milk, cordyline tips, or edible pitpit,[3] or one of a number of herbs, sometimes of supposed medicinal value. Much care is devoted to the cooking of the taro and variety is provided partly by a choice from many varieties of taro growing in most gardens. In the dry season, any of a number of subsidiary foods (sweet potato, German taro, yam, banana, breadfruit and several others) may be added to make the taro stretch further. Meat or fish is eaten only rarely, usually on festive occasions. Foods like tea, sugar, bread and salt are also reserved for such occasions. Although several traditional methods of

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439 communities. When these do occur they are usually between neighbouring
437 communities, as Waddell and Krinks have clearly demonstrated.[9] Intertribal
438 trade, though small in volume, was politically important in that it provided a motive for terminating, or at least interrupting, warlike disputes. Intertribal trade
[628] was mainly in animal products, betelnut ingredients, feathers, *hambo*, and certain artifacts which were known to be of high quality in particular districts, e.g. Binandere pots were exchanged for Yega loincloths; only mountain people could supply cassowary feathers, and so on. Such exchanges may, under modern conditions, take the form of gift exchange, barter or sale but it may be doubted whether barter was ever as clearly institutionalised and differentiated from gift exchange among the Orokaiva as is the case in many other parts of Melanesia.

433 *Money.* With a few reservations, one could describe the role of money in
436 the modern Orokaiva economy in much the same terms as Salisbury used for the Siane (1962). Salisbury distinguishes between three nexuses of activity. One is concerned with the production, distribution and consumption of subsistence goods, another with luxury goods and a third with ceremonial goods. The three nexuses involve not only categories of goods but also different types of social
436 groups. Among the Orokaiva as among the Siane, money mainly enters the
454 luxury and ceremonial nexuses. As with the Siane, the Orokaiva tend to store pound notes in treasure boxes, with *di* and *hambo*, and to keep them for special purposes which are often ceremonial (payment of brideprice, giving of feasts and
436 church donations), but sometimes utilitarian (payment of taxes). Purchases in
439 trade stores are mostly for luxury items, i.e. objects which the Orokaiva use only when there are guests to be entertained (tinned meat and fish, sugar, tea,
[262] batteries, cartridges, kerosene and tobacco, for example). Foods like rice, bread and flour are classifiable as luxuries among the hill people, as here they are used exclusively as guest foods. It is clear, however, from Waddell and Krinks' statistics that on the alluvial plains near Popondetta, rice and flour is bought in far greater quantity in months when taro is in short supply. These products are thus taking the place of subsidiary crops. People in this area prefer to make money from cash crops and services and to spend some of their cash on supplementary staples. The Siane, at the time of Salisbury's research, did not depend on cash as a source of staple food.

197 The use of money for capital goods merits some attention. Salisbury defines
436 capital as a stock of goods, present before a productive act is performed, used in production and 'immobilised' from direct consumption while the act is in
439 progress. Tools and implements are classed as 'durable instruments of produc-
511 tion.' Houses and clothing, etc., are called consumer's capital because they 'produce' services for their owners while they exist. It is interesting to compare, in respect of monetary input, everyday consumer goods and the types of capital just mentioned. While the former have generally remained outside the cash economy, it is precisely in the sphere of capital goods that the traditional industries have been largely or wholly replaced by cash-purchased innovations such as trade, store clothing, agricultural, hunting and cooking implements. Totally new items – radios, flashlights, wrist watches, pressure lamps, sewing machines and guitars have been added. Locked suitcases, for the storage of valuables, are very popular, indicating that safe storage used to be a vexing problem.

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Sivepe has twenty-four dwelling houses and a population of 137. The two politically dominant clans are Jegase and Seho, but some families from the Sorovi clan had not long ago migrated to Sivepe from a neighbouring village (Garombi). Sivepe had been shifted recently to the present site so that decorative borders were not yet established, though such improvements were started during my stay. It was planned that the village would be rectangular in shape, with two long facing rows, as in Hohorita and Inonda, but a third row, supposedly temporary, had been established on the hill behind the planned site. In other respects, however, the same standard of village layout had been followed. The houses were roomier than in the other villages and had walls of horizontally laid shingles, an innovation of which the villagers were rather proud. 105

Sivepe has no chapel, but the Anglican mission station is less than a quarter of a mile away from the village. The school conducted on the station is one of the best in the Northern District; it teaches up to grade six and many of its students qualify for admission to secondary schools. The station also maintains a small field hospital, with a Papuan assistant medical officer in charge. For more serious cases the large government hospital at Saiho was used, a facility serving the whole of the Northern District, but in practice out of reach of distant villages like Inonda. Hohorita people, however, use it frequently.

Sivepe has been Christianised only very recently. There were no baptisms until after the eruption and the Seho clan did not join the Church until about 1963. Today very few pagans are left and they do not form a political or other faction. Leadership is shared between several strong personalities. Sivepe lacks residents who stand out by superior wealth or European education, but is rather more homogeneous in that respect than either of the two other villages. Money comes mainly from coffee and from remittances sent by relatives working outside the village.

Sivepe, like most of the Sasembata-Sohu valley, has an extremely dense population – about 180 per sq. mile. 161

REFERENCES

1 Brookfield uses the Klingebiel and Montgomery (1961) classification of land which distinguishes land areas by the degree of limitation to land use imposed by geographical conditions. Limitations may be due to terrain, lithology, soil, or climate. A large territory surrounding Mount Lamington falls in classes I to III (which means it is suitable for cultivation with a mild degree of limitation), as contrasted with most of the rest of New Guinea, where the limitations are much greater. 133 134

2 Figs. 1 and 2 give a general impression of the geography of the district: land systems, natural features, settlements roads, tribal areas, etc. Table II/1 shows the distribution of population in the Northern District of Papua. Table II/2 shows the age breakdown of the population in Sivepe and Inonda. Table II/10 shows rather strikingly how suddenly labour migration began: the men of the Seho clan of Sivepe were just a little too old to have been involved, but the Jegase clan, whose members were slightly younger, mostly spent some time on jobs outside the village before or shortly after marriage. 167 164 162

3 Orokaiva: *ina*; botanical: *sacharum edule*. 262

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CHAPTER VI

TARO

1. *Introduction*

It has already been pointed out (Chapter II) that taro is the staple food of the Orokaiva and that most of the taro produced is consumed directly by the producing household (over 90 per cent in all villages surveyed). Nonetheless, taro is the most ubiquitous of all Orokaiva objects of exchange: most households give some of it away every day and it is part of the conventional set of gifts that change hands on virtually every ceremonial occasion.

It is the purpose of this chapter to show that taro has all the characteristics of an object of mediation in the sense in which the term was used in the discussion on land. In particular, man identifies himself with taro, there is a series of myths which validate this identification, and these myths indicate the special significance of taro gifts. A wide range of social relations are mediated through taro gifts. Their main purpose is usually the mediating of social relations rather than the setting up of a claim for a specific return gift. In this respect again taro and land gifts resemble one another.

In his discussion of 'Reciprocity and Food', Sahlins (1965: 170–4) takes very

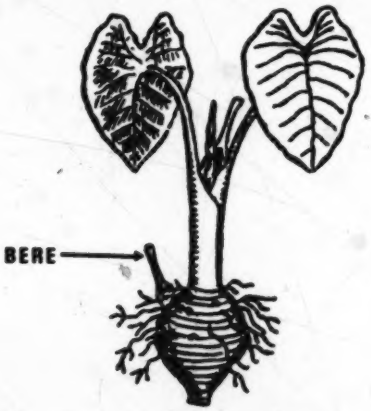

Fig. 7. *Colocasia esculenta* (taro).

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824 she takes them home. The brother is clearly identified with taro growing in the
773 field.)
244 7. The story tells in more detail than is relevant here how the sister learned
539 what had happened, how a magician from Managalasi brought the brother back to life by giving him the heart and intestines of a wallaby, how this man married the sister and how the young man killed his father when the latter returned to complete his meal. He cut his father into many pieces which were shared out among men whose descendants became the various population groups in the Northern District, as discussed in Chapter III.

The myth takes us through two complete cultivation cycles from the planting of the *bere*, the covering over with weeds to protect them from the sun, the gradual growth of the plants under the care of the woman, to the shifting of a new *bere* to a new garden, and finally the growing of these new *bere* to maturity. I was given no explanation as to why the myth contains two cultivation cycles rather than one, but it becomes clearer if we regard the myth, on the horticultural level, as symbolising the domestication of what was at one time a wild plant. At this level, the myth starts with the finding of wild taro and the transplanting of the *bere* of that taro to a garden clearing. When these *bere* grow to maturity, new *bere* are taken from them and these in turn are transplanted. The products of this second planting are regarded as properly domesticated taro.

One may well wonder why the second cultivation cycle was introduced into the myth at all. Direct inquiry did not produce wholly satisfactory answers. [262] People no longer eat taro that grows in the bush, I was told, because it does not taste sweet, it is small, it hurts the mouth. Nobody transplants wild taro *bere* to cultivated gardens nowadays; this was done only in the times of the ancestors. Informants' attitudes to this question were often of this kind when we were [775] discussing the jungle. It was above all a place where the ghosts (*sovai*) lived and therefore dangerous. Wild pigs, especially, often harbour ghosts. If plants or animals are domesticated, it is the dispelling of ghostly essences that is the objective of the practices followed. I shall show this in more detail when discussing the domestication of pigs. Taking into account this fear and suspicion of the bush, it is understandable that a seed taken from the bush is not regarded as domesticated just because it has grown to maturity in a garden. A plant grown from a bush seed is regarded as still being contaminated by *sovai* influence. It is only the second harvest that can be regarded as wholly belonging to the domesticated domain.

[775] We have already met the same idea when discussing the taboo on taro-growing on a dead man's land. This taro is effectively contaminated in the same way as [784] bush taro. It is not eaten by those whom it endangers. The next crop planted is still dangerous, and it is only the second planting after the previous owner's death that is free from taboo.

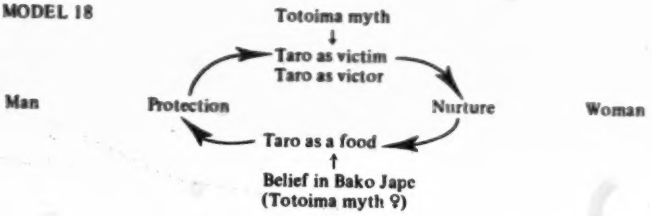
This discussion has already developed one of the main themes of the myth, namely the opposition between bush and garden, the wild and the sown, the dwelling place of spirits and the cultivated domain from which they are carefully banished. If we now turn to the message transmitted by the myth at the social level, we find a similar opposition, namely that between Totoima and his wife. Totoima who kills his own children, using his tusks as he does so, has partly a pig

this reconciliation, he sacrifices himself symbolically in the form of his feast taro. But as the myth states, this sacrifice is not a final death. After the feast is over, the feast-giver is more spiritually potent than ever, having obtained the assistance of his own ancestral spirits. He is thus able to overcome his enemies.

Although these ideas are all in some way implicit in gifts of feasting taro, their threatening aspects are kept very much in the background, as the ostensible purpose of the occasion is to establish amity. If the gift represents a display, in very pacific form, of the donor's power, it also offers an opportunity for communion as the recipient consumes food imbued with the spirit of the donor and the donor's spirit thus becomes, as it were, part of him.

At this point we may summarise in a more formal manner the results of our analysis. The insight we have obtained into the meaning of taro gifts suggests that part of the Totoima myth may be represented by the following exchange cycle:

MODEL 18



This diagram does not represent the transaction between Totoima and his son (which has already been analysed in model 5) but rather the transaction between the taro woman (Totoima's daughter) and the man from Managalase. Here the man acted as protector while the woman provided nurture. The man from Managalase is primarily a hunter. He arrives on the scene with a wallaby slung over his arm. When he finds Totoima's son with his innards missing, he replaces these with the innards of the wallaby, thus enabling the son to kill his father. Clearly the meaning is that man, while having nothing but taro inside him, becomes necessarily the victim of the wild pig (Totoima), but when he has meat inside him he becomes strong and able to kill the wild pig. Thus man, by his concern with hunting and the provision of meat, becomes a protector to his wife.

The Managalase is a neighbouring district where the main crop is yam, not taro, though a variety of inferior taro (*pijama*) is grown in small bush clearings. The Managalase magician is therefore in an intermediate position between Totoima and his son. Unlike Totoima he recognises the technology and domestication of taro, but inadequately as he is mainly a hunter. Such, at least, is the Orokaiva view of Managalase.

Taro, for the Orokaiva, is symbolic of strength; it is preferred to other staples because it is believed to build stronger men. The success of an Orokaiva feast is measured principally by the amount of taro that changes hands. It is significant that in the fighting between Orokaiva and Managalase, the former were most often the agressors and the latter the victims of cannibal raids, inroads on

A [See Category 773, p. 64--Analyst]

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824 hunting territories and the like. Thus the Orokaiva regard themselves as stronger
262 than Managalase (certainly they are more numerous as their fertile land can
827 support a far denser population), which served to show the superiority of taro
[721] over yam.

The taro myth discussed above may therefore be recognised as a charter for two contrasting types of taro gift made by Orokaiva. Woman provides cooked
824 taro domestically but man, in providing the raw feasting taro, employs taro as a
773 symbol of fighting strength. Heaped up in the manner of sacrificial victims, they are given to guests, not so much to express commensality as to display and offer for consumption the competitive strength of the donating group.

4. *A Survey of Taro Gifts*

824 One special interest that taro gifts hold for the field anthropologist is their great
431 frequency which opens the possibility of statistical analysis of a fairly large
125 number of gifts of a fairly homogeneous kind. Twenty-two households were
128 visited daily (or almost daily) providing a record of taro gifts made over twenty-eight days from 31 January to 10 March, 1967. Informants were asked to whom they had sent presents during that day and from whom they had received presents. The survey provided useful incidental information about visitors who had been in the village during the day without my knowledge, and about gifts of objects other than taro. For the purpose of analysis I ignored gifts made to persons not resident in the village, as these were scattered over a great many villages and the survey period was not long enough to establish statistical regularities. Waddell reported that 40 per cent of taro gifts were made to persons outside the village (Sivepe), 10 per cent to villages within one mile of Sivepe, 14 per cent to villages situated between one and two miles from Sivepe, 9 per cent to more distant villages and 6 per cent to expatriate centres. (1968: 218). The statistics compiled by Waddell, however, are in terms of weight rather than the number of gifts. A gift of cooked taro made within a village was for one meal only (averaging perhaps 5 lbs.) while a gift of raw taro made to visitors from other villages or at feasts was more likely to weigh at least 25 lbs. Thus the number of gifts made to persons other than villagers was less than 10 per cent of the total.

As I intend to draw some significant conclusions from the statistics of intra-village taro gifts, it is relevant to describe briefly some difficulties I had in collecting these statistics. The fact that households were asked to report on gifts received as well as gifts made provided an effective check, as ideally all items should have been mentioned twice, once by the donor household and once by the recipient household. People very often forgot to tell me of some of the gifts received and made. Some people were most likely to forget what they had received; others would forget what they had given. If my study had been biased towards psychological anthropology, the frequency of these types of memory lapses among individuals might have given me a basis for establishing a typology of exchange partners. I soon found that nobody claimed gifts they had not actually made or received

From the first day of the survey it became obvious that my questions, simple though they seemed, contained an unexpected ambiguity: should the informant

CHAPTER VII

PIGS

1. *Introduction*

While taro exchanges serve to maintain the basic social network used in transactions, the pig is the most common object of mediation in critical situations. Unlike taro, pig is not consumed as part of the ordinary diet, but is commonly described as a 'feasting food'. As feasts are held only to mark a crisis in social relations, it will be our task to investigate what makes pig meat specially suitable as a feasting food. One may, at the outset, answer this question with a remark about the physiological properties of pig meat: as the Orokaiva diet normally includes little first-class protein, any meal at which meat is served may be expected to have a specially invigorating and exhilarating effect. But in the present inquiry it does not suffice to give physiological explanations: our problem is to discover how the exhilarating experience of eating meat becomes symbolic and how it is magically utilised in the managing of social crises.

Pig meat is used both for the restoration of good relations after a quarrel or estrangement and for the establishment of new social relations. As such it serves a function in widening the social network. This function is hinted at in the basic pig myth about Totoima to which reference has been made earlier. When Totoima was killed, the joints cut from his body were distributed far and wide and caused all those groups who shared in it to multiply rapidly. This sharing may thus be regarded as a kind of communion which implies both social relations and the conferment of a blessing. Both these themes are strongly present in all ceremonies where pig meat is shared.

But there is a second theme as well: there is in every gift of pig meat the notion of a reparation, either for past services rendered or for past injuries suffered, even though these injuries on some occasions may amount to no more than the lapsing of social contact. The Totoima of the myth, of course, was guilty of many murders and his death was an occasion for dispelling many grievances. Thus the gift of pig meat implies not only a communion but also an expiation.

In treating pig as an object of mediation in exchange, I shall need to demonstrate specifically that in certain respects a gift of pig resembles a sacrifice. It must be shown that the offerer identifies with the pig that is given away or sacrificed, and that there is a belief in the 'virtue' or magical power of the sacrifice both in establishing a social link between sacrificer and human beneficiary and in strengthening the spiritual state of the sacrificer himself.

The data show that pig sacrifices may be regarded equally well as rites of communion and as rites of expiation. The key to their significance, however,

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pig-lending becomes a simulation, on a minor scale, of the customs of marriage exchange, where a reciprocating pair of groups send back and forth a female marriage partner at intervals of one generation.

This assimilation of domesticated pigs to human members of exchanging social groups is emphasised by much customary behaviour towards these pigs. This behaviour goes beyond co-residence in the same house and the use of kinship terms of reference, but extends to strict taboos of wide range prohibiting the eating of domestic pigs by their rearers.

4. *Wild Pigs as Victims*

Williams (1930) describes in detail the techniques that are, or were, used for the hunting of pigs: the use of spears, pig-traps, and the collective burning of *kunai* grass to drive pigs towards their pursuers. I myself witnessed such a burn, in which three villages participated as owners of the burnt-over land (Inonda, Urio, Musou) as well as some hunters from Ajoro. The myths explaining the origin of the various techniques of hunting and of cooking the meat do not enlighten us greatly in the study of exchange, except to confirm a point already made in a previous chapter: the *dema* figure who is remembered as having 'given' a certain technique to mankind, is invariably described in the myth as the first *victim* of that technique. The ritual of killing is a very simple one: it consists in calling out one's clan name before striking the fatal blow. This is supposed to give the hunter the strength (*ivo*) he needs in order to kill. Both killer and victim are thus symbolically identified with a primal ancestor.

The killer of a wild pig is not bound by the same ritual restrictions as the killer of either a man or a domestic pig. Williams states that he found no rule prohibiting a man from eating his personal quarry. Nonetheless, I found that in practice the meat of the wild pig virtually always serves some purpose of exchange-sale, barter or the mediating of social relations. The two wild pigs killed by Inonda men during the hunt to which I have already referred will serve as an example.

Killer A presented his pig to his mother's brother who lives in Ajoro. Killer B presented his quarry to killer A, who is B's brother's wife's brother. A distributed most of the joints to men and women from Inonda (including B), and to two Ajoro men who had returned from the hunt empty-handed, but kept one joint. A's mother's brother kept part of the animal he had been given but distributed the rest of it to his Inonda relatives, including A., as well as several affines. In the end everyone in Inonda had received some meat, but sometimes this meat had gone through several hands. For instance, A's sister did not receive meat from the animal her brother had killed, but from the animal her brother received as a present. Her brother gave several joints to B and it was from one of these joints A's sister was able to eat, because B gave it to his own brother who was A's sister's husband.

After this set of circuitous transactions the fires were lit. I noticed that only some of the meat was boiled but that most of it was smoked for later use, In fact only a fraction of the two slaughtered pigs was eaten that night. The smoked meat was kept for a variety of transactions. In line with the modern trend, these included sale at the market, but there were also traditional prestations, e.g. a gift

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224 825 571 to a man who had lent an ornament for a recent ceremony. I was told that meat is sometimes kept for 'months' so it can be offered at a feast or used to discharge an obligation. The housewife smokes the meat over the fire every day so that, after a while, it becomes very 'strong'; the 'stronger' it is, the better.

[251] 431 [437] While the economic motivation in the final disposal of the joints is plain enough, it is less easy to understand the elaborate exchanges immediately following the killing. There are no taboos that could explain why these exchanges were made. One might, of course, account for the whole series of gifts in the same way as I accounted for the taro gifts made between close associates: as a means of maintaining a quasi-commensal kind of social relationship. But such an explanation obscures an important difference between gifts of taro and pig meat, namely that gift taro is usually only a small part of the harvest, whereas it appears to be regular practice (even though not supported by taboo) to give away *all* the meat of a pig one has killed. There is a strong, empirically [262] demonstrated, preference for eating pork that has been *given* rather than pork that has been personally killed.

262 The essential difference between taro and pork, as perceived by the Orokaiva, has already been discussed in a previous chapter. The difference is that taro is regarded as a staple food to keep men alive, whereas pork is regarded as a food of special power enabling men to succeed in tasks of great difficulty, in which [778] success is always precarious. Pork has a special power or *ivo*. The reality of this belief is obvious from field observation. Meat-eating arouses in the Orokaiva a mood of extraordinary festivity and gaiety. After meat, he shows an exuberance and excitement Westerners display only when they have drunk a good deal or are 'turned on' by mild drugs. While one can think of biochemical causes for the Orokaiva behaviour, they explain this excitement themselves by referring to the *ivo* or spiritual qualities of meat.

778 262 224 431 773 These beliefs do not, in themselves, explain why it is considered better for meat to be given rather than consumed by the killer. They do, however, carry us back to the myth – already considered in detail – by which Orokaiva explain the origin of human *ivo*. *Ivo* was personified in Pig-man Totoima until his son slew him and cut his body into pieces. These joints, shared out among men, made the people multiply so that men are now spread throughout the world. The important point to note in this myth is that *ivo* did not come from the mere eating of the meat, but from the sharing out, following by the eating. If *ivo* is to be attained, it has to be through the re-enactment of the myth, which means not only the eating but also the sharing out. This sharing out is always done by cutting a pig into the very same joints as those into which the dead Totoima was dissected. Hence pork – whether derived from a wild or a domesticated pig – is magically most effective if it is a gift.

5. *Domesticated Pig as Victim*

231 825 Pig meat provided at the more important ceremonies of the Orokaiva comes far more frequently from domesticated than from wild pig. One reason for this is obviously practical: the more important ceremonies require very intricate planning in many spheres. The meat supply, which is a crucial requirement for such ceremonies, cannot be left to chance, though wild pork can usually serve to

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We shall need to consider exchange from two points of view: first, as in the preceding chapters, we may consider it phenomenologically, from the viewpoint of the transactional polarity of the exchange partners; secondly, we may consider it from the viewpoint of symbolic thought, as something like the dialogue between *Yin* and *Yang*, as the product of Orokaiva intelligence reflecting upon affective experience.[1] It is this second approach which will be appropriate for much of our discussion about the remarkable Orokaiva myth of the coconut and the betelnut.

2. *The Minor Foods: Objects of Mediation and Paired Symbols*

Although this chapter will deal mainly with the coconut and betelnut, it will be useful first to set this couple into a wider ecological and cultural context. Coconut and betelnut have been chosen for detailed treatment out of a large number of minor foods of the Orokaiva, many of which have their special importance as objects of mediation. An interesting aspect of these minor foods is that Orokaiva symbolic thought arranges them in couples to which a male/female opposition is usually ascribed. Very often these plant couples are grown in close association with one another and it is claimed that they will not prosper unless they are planted together and that, in their wild state, they are also found together. The symbolic association of these pairs of plants may be based on any of a number of shared characteristics: the similar outward appearance of the fruit, a coincidence in the time of fruiting, a similarity in culinary use, in taste, in supposed physiological effects of the fruit when eaten. Sometimes the pair of plants are linked in ritual use and in a common myth.

Among examples of this pairing tendency that may be quoted are two varieties of breadfruit, called *oga* and *eumba*; two condiments important in initiation ritual: the *puga* nut and the salt vine *hoe*; the yam and a red fruit called *hamesi*. The coconut (*vu*) and betelnut or *areca* (*su*) are similarly a pair of subsidiary foods between which there are important points of resemblance which led to their being paired together, and important points of difference which led one of them to be classified as male and the other as female.

Coconut and betelnut are planted together in villages and also in gardens. Both nuts are eaten raw, young coconuts for refreshment, *areca* for relaxation, and both are consumed between meals. Both nuts grow on palms. Both foods have notable (though different) biochemical effects on those who eat them. Both foods are standard gifts made to strangers who visit a village, a coconut being offered as refreshment immediately upon arrival while betelnut is chewed (along with *hingi* pepper and lime) during the conversation. The two nuts are also associated in ritual use. At mortuary feasts, the most important gift objects are large quantities of betelnuts and coconuts harvested from the palms of the deceased, while dry coconut and betelnut are strewn on graves by affines of the deceased. Finally, coconut and betelnut are associated in an important myth which I intend to discuss in detail.

In studying plant couples such as coconut and betelnut two aspects of exchange need to be considered: first, exchanges between persons in which the food products appear as objects of mediation and secondly, mythical exchanges between the male and female plant, where the two plants appear as exchange

5: Schwimmer E-4,5 (1966-1967) 1973
OJ23 Orokaiva OJ23
Mountain Orokaiva

824 partners, while objects of mediation are not imaginary and magical, but have a real
772 existence. I shall deal with these two aspects in turn.

3. *Coconut as an Object of Mediation*

824 Coconut has several culinary uses: it is eaten raw; soup is made of the flesh; the
[252] squeezed flesh produces coconut cream in which taro and delicacies such as river
[262] crabs may be cooked. Young coconuts are cut open at the top and used for a
[272] refreshing drink. Coconut is reserved for two kinds of everyday food gift:
[431] cooked dishes offered to guests and young coconut offered to visitors on arrival. Waddell's figures for coconut transactions are surprisingly low (less than 1 lb. per week disposed of in an average household). In Inonda, where the climate favours the coconut, there has been sporadic commercial exploitation of the nut.

[574] Coconuts are also a feasting food. At ordinary harvest feasts and bridewealth payments they are seen on display platforms along with taro and other
[262] vegetables. Williams (1930: 44) reports that they used to be placed under a taboo when a large feast was pending. I have already mentioned that at mortuary
[764] feasts they are the principal object of mediation between the plant emblem group of the deceased and the village which has provided services to the deceased at the time of death (See Williams 1930: 223–6). I saw a variant of this ceremony at Hohorita in 1967. The plant emblem groups of the deceased couple provided massive gifts displayed on a platform: feast taro, tins of fish, cartons of flour, corned beef in tins, sugar-cane, pots of cooked vegetable food, small bags of salt, smoked meat, a dead pig suspended from a stick, rice, bread, an abundance of betelnut and carved taro suspended from horizontal poles placed above the platform, while at least 1000 lbs. of coconuts, strung to poles supporting each other diagonally, were seen everywhere among the other gifts.

[262] Coconut is correctly believed to be a valuable adjunct to children's diet, as it
[146] provides first-class protein. The belief is explained by Orokaiva in a myth quoted by Williams (1928: 122) according to which the first child ever to eat a coconut
[231] grew miraculously overnight. Children do eat a good deal of it and it is also fed regularly to dogs and chickens. Orokaiva also regard the effects of coconuts on
[235] dogs as miraculous. As neither dogs nor children have any other substantial supply of first-class protein, the coconut relieves a very real diet deficiency. Whatever religious significance is given to the coconut is related to this.

824 Coconut oil is used as a cosmetic for hair and body, not only to enhance
778 beauty but also for its magical efficacy. In a ritual performed over a man-slayer, a coconut was broken over his head as a purificatory and 'defensive' device in
[302] the sense that the fluid would drive away dangerous spirits (1930: 175). With
[789] the same end in view, the bodies of female initiands and certain ornaments worn at dances are rubbed with coconut oil (1930: 207). It would appear, in view of
[881] this evidence, that the coconut is in general identified with *ivo* communicated by the dead to the living. The coconuts of a dead leader are thought to contain his *ivo* in a form which is communicable, not to his kinsmen to whom these
[761] coconuts are taboo, but particularly to his affines. The quoted ritual uses of the coconut are all associated with some contact with the world of death, i.e. critical situations in which the living have been in contact with death and need the help
[764] of the dead to obtain *ivo*. While this *ivo* is communicated, through the mediation

(b) Climate

According to Köppen's climatic classification (Köppen and Geiger 1930) the whole area falls within the Af category (humid tropical lowland), the uniformly high temperatures and rainfall providing a long growing season calculated by the CSIRO to be effectively twelve months in 9 years out of 10.

Two seasons, commonly referred to as 'wet' and 'dry', are definable in terms of wind direction, rainfall and humidity and are clearly recognised by the Orokaiva. The 'wet' season, from December to March, is characterised by north-easterly or north-westerly winds, high temperatures and humidities and late afternoon thunderstorms, while the 'dry' season, from May to October, experiences north-easterly winds, lower temperatures (particularly at night),[1] less cloud cover and more irregular rainfall, both in frequency and intensity.

The mean annual rainfall almost everywhere exceeds 100 inches, increasing inland to 157.6 inches at Awala on the lower slopes of Mt Lamington. The wettest and driest months are December and July respectively, the precipitation ratio between the two being in the range of 5:1 or 5:2. The rainfall pattern is not strongly seasonal by Papua-New Guinea standards and the element of seasonality decreases from the coast inland, from a coefficient of seasonal variation of 0.34 at Buna to 0.27 at Awala. Further, the deviations from the mean reveal that there is only a moderate variability of rainfall; nevertheless it (as revealed in Table 1:1) has considerable bearing on the rhythm of agricultural activities and economic life in general. While the pattern of food production clearly varies with the two dominant seasons,[2] the time-consuming tasks of clearing bush and establishing new gardens show no definite pattern other than a close association with the occurrence of dry periods. Thus the availability of labour and its application demand some flexibility to accord with the vagaries of weather.

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[1] Mean maximum temperatures over the year are in the range of 83° to 88°F., relative humidity at 9 a.m. is 80 per cent falling to 72 per cent at 3 p.m., and mean minimum temperatures are from 65° to 70°F. These figures are derived from observations made at Sivepe on the lower slopes of Mt Lamington. Temperatures can be assumed to be 5°F. higher at the coast and the diurnal range slightly less.

[2] Distinguished by the Orokaiva as garepa - the wet season - when the staple taro (Colocasia) is in production, and huvira - the dry season - when the people must resort to sago, breadfruit and less favoured foods.

433 [184] settlements have access to garden land, hunting and foraging areas and creeks but there are considerable variations in availability of these resources, and others such as fish and potting clay. These variations are expressed in the relative significance of the different elements in the work and exchange patterns of different communities.

592 Within the community, the household is the principal economic unit, aiming at self-sufficiency in terms of procuring food, shelter, clothing and production equipment.[1] Thus, gardens are the responsibility of individual households, and the work group for any activity, including clearing and harvesting, seldom exceeds its adult members. [438] Each household produces its own digging-sticks, spears, building materials, sleeping-mats, etc., but axes, bush knives, cooking utensils [476] and clothing are usually obtained from trade stores. For most phases of production co-operation between households is of little importance.

241 A household may maintain between one and five gardens, three being the mean. These average 0.3 acres in size and are generally between five and twenty-five minutes' walk from the village. In some areas, including Inonda and the Yega area, it has recently become popular to plant kitchen gardens adjacent to the houses, often containing manioc, sweet potato, cucurbits, pineapple and even taro. Banana, coconut, breadfruit and 'hingi' (betel pepper) trees are often planted at random around the periphery of the village and in the village square.

The process of garden preparation has been described in the articles cited above.[2] When all but the largest trees have been felled, most of the debris is burned and the remainder piled around the tree stumps. There is no preparation of the soil and crops are planted with the aid of a digging-stick. Gardens are weeded regularly [417] in the early stages, but less frequently as they approach maturity. In the less densely [136] settled areas where wild pigs are common, such as Inonda, most gardens need to be fenced; when separate households have contiguous gardens they usually fence them simultaneously and help each other in this more often than in any other garden-task.

[262] The staple food plant of the Orokaiva is taro (Colocasia) and comparatively small areas are planted with the subsidiary root crops of sweet potato, yams, 'German' taro (Xanthosoma) and manioc. Interplanted with the ground crops are large herbs and trees, such as

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[1] Exceptions occur in the case of the elderly or infirm, who are often supported by an offspring's household, and so frequently live in a house adjacent to one or more of them (see Map 4).

[2] See p.23.

A. [See Category 102, p. 38--Analyst]

pawpaws, bananas, sugar-cane and edible pitpit (Saccharum edule). No rotations are practised, but a garden may be gradually extended so that the period between initial planting and final abandonment may be as much as two years; plants such as banana and pawpaw may survive longer.

Taro is liable to be adversely affected by a lack of soil moisture during the dry season, and at this time people resort to sago or breadfruit[1] and foraging.[2] Yams and Xanthosoma are also more important at this time, since the former can be stored for many months in specially erected yam houses and the latter can remain in the ground for some time without deteriorating.

In Sivepe, animal protein does not form a regular or quantitatively significant part of the diet. The principal source is the domestic pig, and birds and small marsupials which are hunted. In Inonda and other areas more low-lying than Sivepe, rivers are larger and contribute considerable quantities of fish to the diet, while hunting for pigs, wallabies and other marsupials and birds is also more profitable than in the more densely settled areas.

Since about 1890, new subsistence crops, including sweet potato, manioc, Xanthosoma, corn, pawpaw, sweet banana, pumpkin and water melon have been introduced. The Mt Lamington people claim that yams and sago also are very recent introductions into their area. The fruits are consumed mainly as refreshments, but the vegetables have become important in the diet. Sweet potatoes need drier soils than taro and they mature in about three months. They, with yams and Xanthosoma, are often planted in special gardens, known as 'sera',[3] as distinct from the ordinary taro gardens, called 'pure'. The sago palm is still uncommon in the Mt Lamington area and not everyone is skilled in the extraction of the flour. Its leaves have, however, displaced those of the bamboo as the principal roofing material.

(ii) Exchange. The most common transactions are the daily exchanges of food between the households in any Orokaiva settlement. This may be unprepared, cultivated or forest produce distributed on return from the gardens or it may be freshly cooked food given at the time of the evening meal. People also frequently share food, drink or tobacco while working together or on a journey. They do not record these exchanges and each household is assumed to be in a long-term equilibrium with the others.

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[1] Breadfruit is common only in the inland areas.

[2] Particularly for edible leaves and shoots, which are known by the same Orokaiva name (ina) as pitpit.

[3] Such gardens are often only roughly cleared and not weeded, thus reducing labour.

431 Other informal transactions involving specific reciprocal obligations include the exchange of labour services, gifts of animals
437 killed during a hunting expedition and more or less casual transactions with non-residents.

574 Formal exchanges operate on a larger scale than the daily or casual transactions. Crocombe (1966:71-2) has listed the main Orokaiva traditional ceremonies ('pondo' or feasts) as marking initiation, marriages, deaths, enhancement of prestige, land transfers, the re-establishment of peace after a quarrel and the
[178] lifting of prohibitions between a man and his mother-in-law. The first and last of these have become very rare. In addition to the traditional ceremonies, parties may now be held to mark Christmas, Easter, the saint's day of the local church, the opening of a school or aid post, and birthdays.

A feast provides an opportunity for settling many obligations which may be quite irrelevant to the ostensible purpose and may not
[439] concern the person or group actually 'giving' the feast. It may involve one or several villages or descent groups. The feast foods
[262] are almost exclusively village-produced, although small amounts of storebought goods, particularly rice, tinned fish, bread, tea and sugar, are becoming more common. Some feasts, such as those marking the end of minor disputes between individuals, are essentially exchanges and in themselves take little time; others include much ceremonial and may last longer than twenty-four hours.[1]

Parties seldom involve reciprocal exchanges though at some large ones traditional obligations to other participants may be settled. Invitations are usually given on the basis of residence near the
[535] location of the party rather than of membership of a particular descent group. Most take place during the afternoon and evening
[533] and non-traditional dancing to guitar accompaniment may continue
[534] throughout the night. Generally, only the host's household is involved in much preparation for a private party but other men's wives will help prepare food, for which some return is expected. Often only a small number of those attending receive a share of food in the customary manner. Others may participate in the dancing at will, but, if they wish to eat or drink, must purchase food
[177] or alcohol. Behaviour at such parties is largely imitative of European practice, to the extent that at one wedding party observed the bride was presented with a quantity of old plates, dishes and cutlery by other villagers.

438 In addition to these exchanges with kinsmen, co-residents and
[437] neighbouring villagers, there have been long-established trade links between the inland and coastal people. This trade originally

[1] In the past they sometimes lasted several days.

512 433 241 Such weekly variations can, in part, be correlated with rainfall (see Fig.6:5), less work being done in wet weather as virtually all Orokaiva activities are pursued out of doors; even cooking, weather permitting, is done in front of rather than inside the house. However, while the labour requirements of certain activities vary little from week to week, others are restricted to particular parts of the year or are in response to specific events, and it is these extraordinary activities which commonly account for the weekly variations in activity time.

(a) The subsistence sector

(i) Food production. Subsistence activities predominate, accounting for 30 of the 40.6 hours expended per man-week (see Table 6:4), and within these gardening is the most important single category involving 13.2 hours with bush clearing another 3.7 hours per man-week. Nine hours of the gardening time are spent on the cultivation of the staple food crop, taro.

Although the data provide little evidence for any relationship between the pattern of gardening activities and climatic seasonality, this may be accounted for by the absence of a distinct 'dry' during 1964 (see Fig.6:4). The Sivepe people speak of the dry season as, traditionally, a 'time of famine' and intensification of work when their taro gardens are not producing and they are obliged to resort to wild yams and breadfruit for sustenance, together with the cultivated yams harvested and stored during the preceding wet season. While acknowledging that this has been substantially modified with the introduction of Xanthosoma and sweet potatoes, and the increasingly common practice of sago extraction, the fact that August 1964 proved to be a wetter month than December in Sivepe[1] results in a less well defined seasonal pattern being presented by the data than might otherwise have been the case.

[461] [262] [251]

New garden sites are cleared throughout the year but preferably following dry spells of a week or more for successful burnings. However, there are few taro tops available for planting during the dry season itself. Table 6:4 shows that the most intensive clearing took place during period I, with 4.4 hours per man-week. This figure includes 0.8 hours expended on the communal garden and the time spent on clearing for subsistence therefore approximates more closely to the figure of 3.3 hours for period III, the early part of the wet season.

[221]

The time devoted to subsistence gardening tends to increase during the survey. However, in comparing taro, yam and sweet potato, distinct patterns of activity emerge. In taro cultivation

[1] 15.42 and 14.17 inches being recorded respectively.

[TEXT CONTINUED ON PAGE 83]

244 Breadfruit trees grow around the village and in garden areas, some being planted and others self-sown but preserved when garden sites are cleared. All are individually owned. Harvesting is relatively easy, the fruit being removed from the tree with the [262] aid of a knife attached to a long stick. Sago apart, the breadfruit comprises a major element of diet during the dry months.

433 While the inland Orokaiva are essentially food-gardeners - a [224] fact dictated largely by the density of occupation where intensive utilisation of the forest has greatly reduced its plant and animal [512] resources - both hunting and sago-making are of limited importance and occupy 1.8 and 0.4 hours per man-week respectively.

224 Traditionally the Sivepe people claim to have hunted feral pig [136] high on the slopes of Mt Lamington but this has ceased now they 'have too much to do'. No such pigs are found in the bush adjacent to the village but bandicoot, wallaby, cus-cus, flying fox, and a variety of birds are not uncommon. Periodically domestic pigs [411] enter gardens whereupon they are usually hunted out and killed, either by the irate gardener or the owner of the animal. While a spear may be used in the latter case, shotguns are now often used or special hunting parties organised where a net is employed. Use of the two shotguns held in the village is usually confined to the owner and others who contributed to its purchase. Such hunting, with the aid of a torch, is normally done on moonlit nights and is most common in the dry season when flying fox are attracted to the ripe breadfruit.

[512] During the survey, however, most hunting was done during period III when 4.8 hours per man-week were recorded, the avowed object being to 'stockpile' smoked meat for the annual Christmas feast held on Sasembata mission station. Large intra- and inter-village group drives were organised daily for two weeks, the activities being initiated by the priest blessing the dogs. Wallabies were the principal animals caught. During both weeks time spent hunting exceeded 11 hours per man-week, or more than that devoted to taro gardening. These drives were facilitated by a spell of unusually dry weather.

222 Sago-making is a highly seasonal activity. In Sivepe, production 252 is confined primarily to the dry season when 1.5 hours per man-week [22] were spent on it, rising to 6.4 hours in week 16 when only taro [512] gardening, among subsistence activities, was of greater importance. [461] The work is arduous and is only undertaken with reluctance as the flour must be produced as quickly as possible following the felling of the tree. It is one of the few activities not interrupted by heavy rain.

[461] Because of the very high labour requirements, sago-making is essentially a group enterprise and, not being popular, is only commenced when a number of families have little producing food in their

[TEXT CONTINUED ON PAGE 87]

252 [461] gardens. If absolutely necessary it will be made without outside assistance, such being the case with one household with inadequate food supplies in its gardens in period III because the head had been absent for several weeks earlier in the year.

241 ●[262] (ii) Seasonality and the pattern of subsistence food production. While no significant 'dry season' occurred during 1964, the data gathered suggest that the cycle of agricultural activities is partly designed to allow for a dry spell at mid-year. During period II little taro or yam were producing and breadfruit and sago replaced these as the major contributors of carbohydrate to the diet. Yet an agricultural system which is characterised by a period of food scarcity was disrupted by unseasonally wet weather. Heavy rains deterred people from carrying out routine garden tasks, including food gathering, and probably accounted for the postponement of sago-making. On a number of nights during this period evening meals were not prepared because of rain and individual families went to bed hungry.

433 512 [432] (iii) Marketing of subsistence produce. This is only a minor activity amounting to 0.3 hours per man-week. Food crops may be sold either at the weekly market at Saiho hospital or exchanged for trade goods at Sasembata mission station, but their rates are so low that there is no systematic production of food crops for sale to these bodies.[1] Although more favourable prices probably obtain at Popondetta market, distance and lack of transport preclude the Sivepe people from selling there.

(iv) Other subsistence activities. Other subsistence activities comprise the preparation of tools and equipment and house construction. Handicraft work only accounts for 0.3 hours per man-week and primarily involves the preparation of axe handles, spears, traps and nets for hunting, troughs for fermenting coffee, a variety of mats and bags made from woven palm leaves, and various decorative items of a ceremonial nature.[2]

While mats and bags are made throughout the year, the other tasks are largely related to seasonal and specialised needs, the peak (0.5 hours per man-week) occurring in period III with the preparation of hunting equipment and ceremonial dress for the Christmas festivities.

Forty per cent of the time spent in the preparation of tools and equipment is taken up by ceremonial goods, 25 per cent by woven baskets and mats, and 20 per cent by traps, nets and spears for

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[1] See p.20. [462]

[2] String bags have been excluded on the grounds that, although probably the most important piece of equipment, the women usually make them in the course of doing household tasks.

A. [See Category 435, p.20--Analyst]

8: Waddell & Krinks E-4,5 (1964-1965) 1968 OJ23 Orokaiva OJ23

time. In effect Gorukari is concerned essentially with producing and preparing for consumption the staple food, taro.

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[262]

The figure of 48.0 hours per week is somewhat misleading in the case of such a woman where so much time is taken up with care of children and minor household tasks which do not lend themselves to quantitative analysis. In following her movements through a single day it was found that, between rising at 0610 and finishing the evening meal at 1845, Gorukari spent only 1 hour 50 min. actually resting or eating. She was therefore active for a total of 10.8 hours compared with an 'activity' figure of 8.1 hours. From 1845 until 2220, when she retired, she sat and talked with her husband. Assuming this to have been a typical day, a woman such as Gorukari has an activity week of about 75 hours.

Social obligations account for 3.1 hours per week, 55 per cent spent in visiting. Not only is this substantially less than the figures for Linton and Palminus but it reflects a somewhat different emphasis. While the role of women in ceremonial life is subsidiary to that of the men, they are often responsible for the more informal exchanges which are a characteristic feature of Orokaiva life and, since the society is typically a patrivirilocal one, it is to be expected that the women spend a significant amount of time visiting their kin.

[562]
[591]

Gorukari's primary concern with food gardening and household tasks is expressed in the general distribution of her time. In particular she is more concerned with subsistence activities than the sample in general, these accounting for 79 per cent of her total activity time, while she also places greater stress on productive tasks. These facts are manifested in both the infrequency and short duration of her absences from the village which amount to only 1.1 per cent of potential survey days.

Olga. Olga is aged about 48 years and the wife of the most progressive of the older generation - a man with extensive non-traditional experience. They have eight children, the eldest of whom resides, with his family, next door. The two youngest, girls aged 10 and 14 years, attend Sasembata school and still live at home. All but one of the other children are married and normally reside elsewhere.

Subsistence gardening and household tasks dominate Olga's activities to an even greater extent than they do Gorukari's, accounting for 89 per cent of total time in an activity

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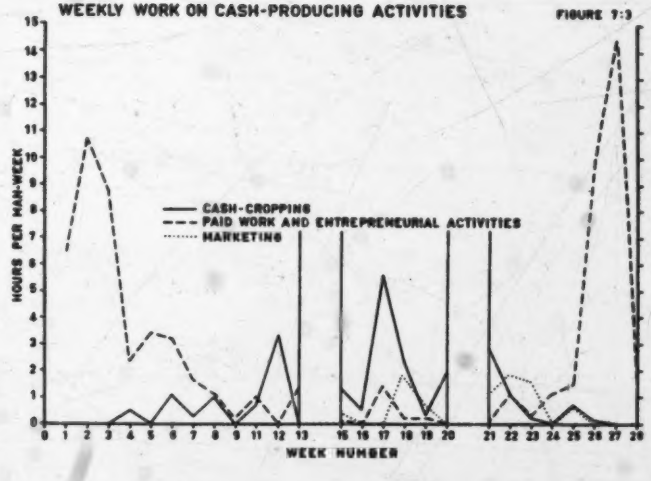
INONDA
WEEKLY WORK ON CASH-PRODUCING ACTIVITIES FIGURE 7:3



222 The gathering of forest plants receives more attention during
462 the dry season to compensate for lower garden production. The
262 increased dietary significance of such plants at this time is,
perhaps, understated in Table 7:3, since women often collect green
224 leaves beside paths while walking to or from other activities and
221 such gathering may not be recorded. In addition, a considerable
[411] amount is gathered by children. Hunting also increases during the
dry season, with the increased number of wild pigs. However, a
significant factor in 1964 was the acquisition of a shotgun in July
by the leading man (with financial assistance from others, who
thereby acquired rights of use). From this time, hunting to obtain
226 meat for both food and marketing increased, becoming most popular
221 during period III when marketing also was most frequent. Due to
the drop in water levels, the time devoted to fishing during the dry
season is much less than in the rest of the year, but over the year
as a whole, more time is spent in it than in any other single activity.

437 431 of each in the food pattern, the proportion of total production of goods entering into the distributive system varies considerably, being related to both its degree of scarcity and the circumstances of the exchange.

[241] [262] Taro, being the staple food, is normally readily available to all households from their own resources and it is estimated that only about 4 per cent of total production enters into distribution.[1] Of this figure over half (56 per cent) circulates within the village, usually in the form of individual plates of cooked food distributed after the evening meal is prepared. These evening distributions are initiated by the first to prepare their meals, and offered to those returning later to help allay hunger until their own food is ready. While the principle of reciprocation applies on such occasions individual exchanges are not accounted for. This applies equally to areca, lime and pepper which are casually distributed at gatherings.

Of foods which are resorted to in the dry season, particularly sago and breadfruit, a much higher proportion of total production enters into circulation. Well over half the sago produced is distributed, specifically to compensate for assistance rendered in its working, but more generally in recognition of the general scarcity of food and of an obligation among those endowed to share their stocks with the less fortunate. Even in such instances, however, the manner in which it is distributed stresses particular relationships.

431 23 224 [262] [574] Custom requires that an individual should not eat the meat of a pig which he has reared himself or of wild game which he has caught. Consequently virtually all meat 'produced' enters into the exchange network, the only observed exception occurring when a pig breaks into a garden and the owner endeavours to kill it himself. Even in

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[128] [1] This figure was determined by using yield data gathered in Sivepe during 1961-62 by the FAO Survey of Indigenous Agriculture. It was estimated that 159 persons produced 298.1 tons of taro in one year from 51.4 acres. Assuming the acreages to be constant the FAO survey estimates an individual requirement to be 0.34 acres per annum and Rimoldi (1966:20) estimates 0.36 acres - a yield of 5.5 tons per acre is obtained. (This includes area under other crops, but taro accounts for 80 to 90 per cent of the total acreage and it is assumed this proportion is constant.) Thus one individual produces 1.87 tons from 0.34 acres.

Using the ratio 70:36 of adult to individual acreage (Rimoldi 1966:19) an adult produces 3.63 tons from 0.66 acres. The present survey covered 4,741 adult-days (man-days) or 12.9 adult years. A yield of 46.8 tons was therefore obtained. During the same period 1.9 tons of taro - 4.1 per cent of total production - was disposed.

[TEXT CONTINUED ON PAGE 187]

434 Excluding the researchers' contribution to total income only 39 per cent is derived from the sale of cash crops and subsistence [43] produce, the bulk entering instead through the gift exchange system, largely in the form of remittances. By contrast, excluding bank deposits, 63 per cent of disposals takes place in the monetary system, principally as purchases of storebought goods, only a minority being distributed as gifts. In effect, therefore, the gift exchange system serves as the principal mechanism for the acquisition of cash, but only a minor part entering in this way is so distributed, income being used rather to purchase goods unavailable in the subsistence sector of the economy.

Seasonal variations in exchange patterns

438 (i) Subsistence produce (see Table 10:4 and Fig.10:2). Although no net movements of subsistence produce in or out of the sample are identifiable, other than those directed to the researchers, transactions do reflect the temporal pattern of availability of particular goods. Three broad categories are identifiable - continuous, seasonal and periodic. Of the main cultivated plants only the circulation of sweet potato is maintained at a constant level throughout the year, as it is more tolerant of dry conditions than the staple, taro. However, in terms of diet, its role is not important and in only two weeks did it constitute the major item of exchange.

During periods I and III taro predominates in transactions comprising 37 per cent and 32 per cent respectively of the total volume, but with the annual fall in production in the dry season it declines to 11 per cent, and breadfruit and sago replace it as the main exchange items with 35 per cent and 17 per cent respectively. [262] The production and distribution of these latter crops is almost entirely restricted to the dry season when they constitute the major part of the diet. The peak in breadfruit exchanges precedes that of sago, this being a reflection of both food preference and labour productivity. Only after the supply of the former has been largely exhausted is the labour intensive work of sago extraction resorted to.

Among the Orokaiva, as elsewhere in New Guinea, meat, in particular pig, provides the classic example of goods only periodically available. Although most pigs are exchanged ritually prior to consumption, the fact that a specific quantity of meat may change hands several times, commonly by a process of subdivision and partial redistribution, precludes any meaningful estimation of the level of consumption. It is nevertheless worth noting that on twelve weeks no transactions were effected and on only six did the total volume exceed 100 lbs. On two of the latter six weeks pig was the major exchange item, on a third the volume was only marginally exceeded by that of taro, while on all three weeks it accounted for more than one-third of all transactions.

derived from the data is in part misleading since sales of coffee were made periodically from June through to September while rubber can be, and is, sold at any time of the year. A feature of both crops is, however, that substantial quantities are harvested, processed and stored prior to entry into the exchange system. Unlike most subsistence crops both are capable of storage while, in the case of coffee, the infrequent opportunities for sale make this a necessity. Over the survey three sales of rubber and five of coffee were recorded.

(iv) Storebought goods (Table 10:7 and Fig.10:3). The distinct periodicity apparent in the movement of the major storebought goods is connected with both seasonal factors and the receipt of parcels from kinsmen in wage employment. The consumption of these goods can be variously judged, according to the time of year, as supplementing the subsistence diet or as being surplus to requirements. During period I, with little feasting and an abundance of garden produce (plus a shortage of available cash), only a small quantity of food is purchased and none circulated. The acquisition of rice is at a peak during period II to compensate for the shortage of starches in the subsistence sector; yet even at this time consumption amounts to only about 1 lb of white rice per adult per week. Most is purchased in 1 lb or 2 lb lots from local trade stores, although on one occasion (in week 16) a 56 lb bag was purchased. Most conspicuous consumption and exchange takes place during period III: tinned meat and fish which are frequently consumed with the staple foods exceed rice in the value of exchanges, but acquisitions of them only amount to about 0.5 lb per adult per week.

The climax in the circulation of tobacco and clothing during period II reflects the receipt of two gift parcels by sample members, with goods to an estimated value of $65. In the case of cartridges the increased circulation during the dry season was associated with improved hunting opportunities and, in connection with them, the quasi-entrepreneurial activities of one sample member.[1]

The manner in which storebought goods are circulated is similar to that of subsistence produce in that there is little storage or stock held. Because the utilisation of these goods is related primarily to specific circumstances, such as the availability of cash, receipt of gift parcels and feast requirements, the pattern of exchange over time assumes a highly irregular form which, to a considerable extent, obscures seasonal variations. It should be noted, however, that this form closely parallels that of the circulation of subsistence produce (see Fig.10:2).

A,[See Category 438, p. 193--Analyst]

[1] See p.119.

437 Table 10:16 outlines the geographical pattern of transactions of
438 subsistence produce and labour services. In so far as produce is concerned, 96 per cent of all acquisitions and 89 per cent of disposals[1] are restricted to subsistence villages. Furthermore, almost all of these exchanges are effected within a radius of two miles of Sivepe, with the majority operating within the village itself. The small net outflow of produce away from the villages (of sales and gifts to relatives in paid employment) is more than compensated for by the dominant inflow of cash and storebought goods described above. Within this broad pattern specific variations are identifiable, from produce which is exchanged almost exclusively within Sivepe to that which figures largely in links with distant villages and points outside the village network. Within the former category are prepared dishes such as 'soup', foods eaten primarily as refreshments, such as sugar-cane, and those which dominate the diet during the dry season - sago and breadfruit. The latter category comprises the ecologically based transactions of areca, lime and fish. There is only a very limited demand for all three, however, and the volume and frequency of such exchanges is of little significance within the total pattern.

Taro and pig figure largely in inter-village exchanges, their movement being explicable primarily in cultural terms. One is the main source of carbohydrates, the other of protein and both serve as essential measures of wealth in food resources, therefore dominating ceremonial exchanges. In addition, custom dictates that a person cannot kill and consume his own pig but must effect an exchange with another. Since it is unlikely that two households in the same village wish to kill pigs at the same time, the transactions are largely made between individuals in different villages.

The movements of yams and Xanthosoma are somewhat anomalous: almost all acquisitions of the former originate within Sivepe but many of the disposals are directed to other villages, while with Xanthosoma the pattern is reversed, most acquisitions coming from other villages. Neither crop is particularly abundant and the extent to which each is planted is largely a matter of individual preference, but both are favoured because of their storage qualities. Their variable movement must therefore be viewed as an expression of individual rather than broad cultural or ecological considerations.

437 Disregarding, for the moment, absences involving assistance to settlers at Sangara, the exchange of labour services is restricted, effectively, to the inter-village level and, almost entirely, to Sivepe itself. In the case of subsistence activities it is not

[1] If transactions with researchers are disregarded this figure becomes 86 per cent.

[TEXT CONTINUED ON PAGE 219]

Chapter 11

Exchange patterns: Inonda

The nature and volume of transactions

The Inonda people carry out exchanges of subsistence produce, labour services and items derived from trade stores not only with each other but also with people from other villages, with settlers and with kinsmen or friends who are wage earners. Reciprocation for a gift is not necessarily on the same occasion, or in the same quantity or of the same item. The exchanges effected by the 21 adult members of the village were recorded simultaneously with the data on activity patterns, a total of 2,782 man-days being covered.

(a) Non-monetary sector

(i) Subsistence produce. Table 11:1 shows the total amounts of each item given and received by the villagers in all non-monetary transactions. The dominant position of taro in the horticultural system and the diet is emphasised by its role in exchanges. The economic importance of the sparsely-populated grasslands and hill areas is also clear from the fact that wild pig is the next most important item after taro; other hunted produce and fish are also significant. Some allowance should be made for the fact that pig carcasses, weighing up to 200 lbs are often given whole rather than after the removal of the gut and bones.[1] In addition, portions of meat frequently pass through a 'chain' of exchanges and are thus counted several times. This process occurs more rarely for vegetable produce. These qualifications, however, are not sufficient to diminish the significance of pigmeat in the exchange pattern. Sweet potato is the second most important crop (see Table 4:9) and the third most important item in subsistence transactions. Banana, sugar-cane, yam and pumpkin are the main subsidiary crops and are also significant in the exchange pattern. The comparatively small

[1] This practice is determined partly by the belief that in certain circumstances, such as when using a new gun, spear or new hunting dog, a hunter should not keep the prey to himself.

TEXT CONTINUED ON PAGE 230

243 'paddy' to food, prevented the conversion of the food to cash,[1]
[262] though it was quite suitable for village consumption as a supplementary food. In fact, imported white rice has now become an important 'status' food at feasts.

474 Rice continued to be grown for about a year after Rev. Clint's
241 departure; small quantities were sold by the cupful but the income received would have been negligible. In 1951 the crop was attacked
[242] by a species of 'army worm' and on the recommendation of the District Agricultural Officer was destroyed. No further plantings were made and all co-operative agricultural activity lapsed.

By 1952 co-operative agricultural activity had ceased among the Yega. The death of Samuel Ungega (the only man in the co-operative who had any training in co-operative work and the only man capable of directing activities on a long-term basis), removed from the Gombe co-operative the main driving force.

[177] The basic reason for the failure of the Christian co-operative seems to have been that Rev. Clint's aim was to produce a storable food crop whereas the Yega wanted a cash crop. The scheme was established on an inadequate business basis and with insufficient understanding of the people's deep-seated desires.

The modern co-operative and the extent of Yega participation

474 A subsequent co-operative, organized by the Administration and
[241] known as the Gona Villages Native Society Limited, came into being in May 1953. In that month share capital amounting to $2542 was repaid by the Administration to 332 members of the old Gona, Gombe (Iaga) and Garara co-operatives, most of whom immediately became shareholders, at a uniform $10 per share, in the new society. The new co-operative was to serve different purposes from the earlier ventures. There was to be no attempt whatever at communal
[443] production. Functions were to provide marketing facilities for the agricultural produce of individual members and to conduct a retail trading store.

[347] Operations were begun in a store previously owned by A.H. Bunting Ltd on the Popondetta-Killerton Road, half a mile from Cape Killerton. Originally built from local materials and with a tin

[TEXT CONTINUED ON PAGE 64]

[657] [1] Only brown unpolished rice is issued as rations to the Administration and plantation labour. The endosperm and much of the vitamin content are removed in the production of white rice, so that employers issuing white rice would have to supply additional vitamins, an uneconomic proposition.

purchases. In this way the shareholders obtained additional rebate benefits. In general, however, sales to non-shareholders correlated fairly closely with the presence or absence of small coastal trading vessels at the wharf.

Most of the buying at the store was done by men. There were no women shareholders, but wives and daughters used their husbands' and fathers' share numbers when purchasing goods.[1] The men were discriminating buyers and a man who had walked some miles to the store to buy a specific item would usually stand for a while surveying the goods displayed and asking a question or two about prices. After the purchase was made, usually of only one or two items, the buyer left the store, but usually stopped to chat at Surilai village on the northern side of the store before going home.

An analysis made of the spending patterns of a group of 27 Yega shareholders over a two-year period (January 1961-December 1962) showed that of a total expenditure of $1148, 49 per cent was spent on food (mainly tinned meat, tinned fish, rice and sugar), 11 per cent on tobacco, 11 per cent on clothing, 7 per cent on kitchen utensils, 3 per cent on garden tools and 17 per cent on miscellaneous items including torches, soft drinks, kerosene, matches, fishing gear, etc.

The most sought after foods were those with high protein content - tinned meats and fish. Only one bicycle (costing $52) was sold during the two years surveyed. The low rate of spending on garden tools is noteworthy, considering the importance of gardening in the Yega economy; but axes and bush knives were carefully guarded and, being very durable they needed only occasional replacement.

Almost every Yega child over six years of age and every adult of both sexes owned at least one item of European-type clothing. On working days, cotton skirts were worn by the girls and women, and shorts or cotton loin cloths by the men, but tapa (bark cloth) skirts were preferred by the adolescent girls and tapa boavo (bark loin cloth) by the older men for Sunday wear. Most people preferred to purchase their clothing requirements from the wider range available in the larger Popondetta stores rather than from the co-operative.

Retail trading showed a remarkable increase from 1961-2 to 1962-3. The turnover doubled during the financial year but a fall-off in trade of about 12½ per cent occurred in 1963-4. This situation probably resulted from lower spending by Yega shareholders,

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[1] In the course of six or seven visits to the store I can recall only once having seen a woman at the counter.

241 The supplementary food plants provide both variety in the diet and some insurance against failure of either of the two main crops. Corn matures within two or three months and can be planted amongst the taro if a food shortage appears to be im-
[242] minent. Both wild and cultivated sago is used as an emergency food. There is usually a shortage of garden crops at the end of the dry season, and this is overcome by making sago. Sago is only eaten at other times when large quantities of food are needed for feasts.

The boundary of a food garden remains recognizable for about three years from the time of clearing. By then the garden is covered with either regrowth or kunai and is no longer
126 producing food. All food gardens with recognizable boundaries were surveyed by chain and compass and the area of each garden calculated.(1) The date on which the vegetation had been cleared for the preparation of each garden was determined as nearly
241 as possible. The average area of land required for food gardens for the village as a whole was found to be 12.76 acres or 0.27 acres per head of population per year.(2) Areas of subsistence gardens at present being cultivated or from which food is currently being harvested are summarized in Table 2.

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(1) Maps on a scale of one inch to one hundred feet were drawn. These have been reduced photographically and are reproduced on pages 106-108A

[128] (2) This figure was calculated by the following method. For each household, areas of all gardens with recognizable boundaries were determined and totalled. The date at which the oldest of these gardens was established was determined for each household. From this information the area of garden land required per month was established for each household. (For example if the total area of gardens made by a household over 27 months is 5.4 acres, then that household makes new gardens at the rate of 0.20 acres per month or 2.40 acres per year.) The area of new garden land brought under cultivation each month by the village as a whole was then calculated by totalling the area required per month by each household, and multiplied by 12 to give the area required per year. This figure divided by the population of the village, gave the area of land required for gardening per head of population per year. The area of 0.27 acres of garden land per head of population per year should not be confused with the area of land which people were cultivating at the time of the survey. This latter area (0.31 acres) includes land cleared but not planted, land planted with gardens not in production and land from which garden produce was being harvested at the time the survey was made. It does not relate to any period of time, but gives an indication of the area of land which the households were actually tending at that particular time.

A [See Category 102, pp. 106-108--Analyst]

423 241 245 miles away and another to collect betel nut about fifteen miles away.(1)

The rights of females who marry outside the village vary according to distance, frequency of contact with the home village and adequacy of supplies of that tree in the locality where they reside. It is said that a widow can return to her village of origin and resume rights which had been exercised by her brothers since her absence. We found no instances of females who live in or originate from this village having exclusive rights to any tree, either in this village or any other, though instances do occur of trees being given by a woman's brother or father to her children.

222 Unlike in other parts of the Orokaiva country sago does not grow wild in Inonda though some wild sago is collected by Inonda people from other lands in which they hold rights. [267] Sago is eaten mainly in the latter part of the dry season when other foods are short, or at other times when large quantities of food are needed for funerary or other feasts. What people refer to as 'a tree' is frequently a clump of trees in various stages of growth, but all of which have originated from a single plant.

423 241 245 A total of 21 sago trees was accounted for on Inonda lands, but the bulk of sago supplies is obtained from outside the area. Four Inonda people claimed five trees at Sambogo, where their forefathers had lived before shifting to Inonda. All Inonda people claim rights to wild sago growing at Aramba, the "original" home of the Andiriha and Jego'undi clans, and some of them have made sago there in recent years. The Inonda people claim the right, along with other branches of their clans, to use whatever trees they need. People from this village also make sago from wild trees bordering the Embi

(1) Sago is difficult to prepare and heavy to carry and is usually obtained from the closest possible source, even if this means making arrangements with persons to whom one is not closely related. Betel nut, on the other hand, is light, and it is easier to go a longer distance and obtain it from some close relative than it is to get it closer if that would necessitate contracting obligations with more distant kin.

262 The principal food at Ombi-Tara is taro, while other foods of importance include sweet potatoes, yams, bananas and plantain, edible pit-pit (saccharum edule) and a wide variety of leaves and bush cabbages. Bread-fruit, pandanus, betelnuts, coconuts, pine-
[224] apple, pawpaw, watermelon and sugar cane are also eaten. The main sources of animal protein are provided by wild pigs, birds, flying foxes and the occasional cuscus. These add variety but provide
231 comparatively little food. The keeping of domestic pigs in vil-
657 lages has been outlawed for health reasons by the Ilimo Local Government Council which serves Ombi-Tara, but one old man, a former clan leader, kept three pigs under his house.

342 Readily available natural vegetation provides housing materials. Timber is used for the framework and walls, blackpalm or timber for the floor, and thatched sago leaves for the roof. Houses have an average life of about four years.

162 The population of Ombi-Tara by clan and location is presented in Table 8.

Table 8

Resident population of Ombi-Tara by clan and location, January 1966

Clan	Ombi			Tara			Blocks			Total		
	M*	F*	C*	M	F	C	M	F	C	M	F	C
Mumu	20	20	56	1	1	2	6	7	13	27	28	71
Kuei	3	3	7	11	8	20	-	-	-	14	11	27
Total	23	23	63	12	9	22	6	7	13	41	39	98

M* Adult males. F* Adult females. C* Children.

[166] [167] [464] Note. In addition there were seven Ombi men and six Tara men absent from the area working for wages, that is, roughly one man away for every three remaining at home.

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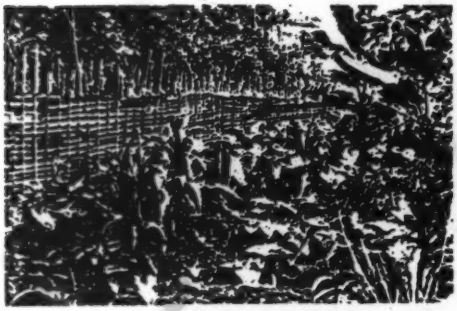


Fig. 6. ***A Yega swidden. Notice the variety of interplanted crops which here include maize, taro, sugar cane, pineapple, paw paw, and bananas. The fence, built to keep out wild pigs, is about five feet high***

241 b) *Fencing.* Most Yega swiddens are fenced, at least partly, against the depredations of wild pigs (Fig. 6). Since fencing is a tedious task, natural features such as steep creek banks are utilized as fully as possible. But frequently one finds a swidden entirely fenced except for a gap left purposely to tempt the pig to enter the garden. A trap is then set, or a hunter takes his stand nearby at night. When the gap is not being used for hunting purposes, a fire is lit or pieces of rag are hung there; pigs scenting human beings will not then enter the garden.

[224]
[825]

241 c) *Division of labour.* Most garden work is performed by both men and women, but cutting large trees is men's work only, and harvesting is performed by women only. Incidentally, the women also carry the loads of vegetables weighing sixty to seventy pounds back to the villages, often three or four miles, sometimes with a load of firewood and a baby on top.

462

[482]

262 d) *Sago production.* Sago is an important supplementary food; it is particularly important as a famine reserve. During an unusually long dry period in 1965 the Yega and their neighbours were reduced to living, for some months, almost exclusively on sago. Production is a tedious process. Sago is a starch which, with fibre, makes up the internal bulk of the

222

[P.9-B]

18: Dakeyne K-5 (1962-1964) 1969
OJ23 Orokaiva OJ23
Yega

BOTANICAL NAMES OF COMMON FOOD PLANTS

137
262

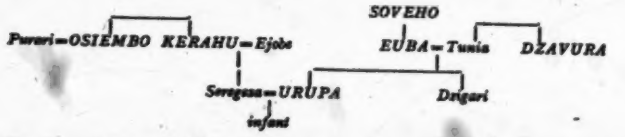
Banana — *musa* (spp.)
Cassava — *manihot* (spp.)
Coconut — *cocos nucifera*
Sago — *metroxylon sagu*
Sweet Potato — *ipomoea batatas*
Taro — *colocasia esculenta*
Taro Kong Kong — *xanthosoma* (spp.)
Yam — *dioscorea* (spp.)

[P.40-A]

21: Belshaw E-5 (1951) 1951 OJ23 Orokaiva OJ23
Mount Lamington

the final situation is satisfactorily sorted out. In such ways, incidentally, it is probable that new clans are formed.

Another factor which must inevitably delay re-building is the activity needed to re-establish social connections. When I was at Popota village one week-end I checked on food that was being eaten, and found that although the children were carefully fed with nuts, pumpkin tops and other valuable foods, the adults were either going without food altogether or eating the despised wild yam; their taro gardens were rotten or choked with weeds. I noticed with surprise a group of people, heavily laden with bags of taro, hurrying along the road. They walked straight into the village and up to a house, and a few minutes later I heard the noise of crying and wailing. A group of nine people were sitting in two rows facing each other under the shadow of a humpy. The relationship of the whole group, with the exception of two unrelated village women, is expressed in the following diagram (capitals signifies men, lower case women).



Kerahu and Ejobe lived in Popota, and their daughter Seregeza married a Sasembata man. When the volcano erupted parents and daughter were evacuated in different directions, and although from time to time they heard news of each other they were unable to see each other. When they returned to their villages the daughter's first thought was to visit her parents, but this could not be done until a humpy had been built and a present of food collected. On this day that they met the procedure was almost automatic: it was like a well-rehearsed play in which every actor knew his part. Seregeza sat down with her baby, and her father gently cried by her side. Her mother sat in front of her, embracing her and crying in a wail:

Nau kahare tato iungenu

Ijota pouta tato iungenu.

This was translated for me as "I am the girl who was chased away, to other countries, other places chased away." Meanwhile Urupa and his family squatted on mats facing the crying group and chewing areca nut, and Purari with a village woman relieved Seregeza of her bag of taro and began peeling it. The wailing continued for about an hour, other friends and relatives joining the group, and then conversation became general and food was eaten.

In such ways are the social connections remade. And some thought and activity is being devoted to other ends as well—the dance, for instance. Although there was no desire evident to conduct large mortuary feasts for those who had been killed, it may be expected that, as gardens come back into bearing, individuals will

311 products, such as slow-growing trees, which are used for house
posts, drums, and other artifacts. A great deal of Sivepe land
423 is in young bush but this is fallowed garden land. After eight
years or so, it grows sizeable trees, and sometimes it is fallowed
for much longer. In this bush, many trees may be found that have
actually been planted by man and are owned by individuals.
Prominent among these are breadfruit, various nut trees, fruit
trees and trees with other specific uses. Some of these are
224 deliberately planted in bush. People go to the bush to collect
[222] these, to forage and to hunt. Although hunting expeditions do
occur periodically, and cause much excitement, they yield very
[136] little meat. Not only is the area too small to contain much game,
but also it appears that very few birds and no game apart from
[411] small marsupials are actually still left. The same is true for
the rivers which contain very little fish. I could not help
wondering, in fact, whether the meat collected was an adequate
[262] return for the number of cartridges used to kill it. Hunting
expeditions occurred only when there was a feast, and when the
offering of fresh meat to guests was especially desirable.
(Tinned meat might be cheaper than the cartridges but much less
esteemed.)

311 In this respect, the situation was very different in Inonda
where only a fraction of the land was used for gardening so that
almost all of it was hunting land. Most of this was in kunai
grass, which was very often burnt over. The effect of these burnings
was very often that good garden land also fell a victim to fire,
224 valuable trees were destroyed and villages endangered. The yield
223 in meat was much higher, however, so that in Inonda, meat actually
became an economic resource: it was sold on the market and used
as gifts in return for feathers and other valuables. There are
more birds at Inonda than at Sivepe, more marsupials and also a
good chance of an occasional wild pig. Neither at Sivepe nor at
Inonda is there evidence today of the use of traditional hunting
techniques, though traditional fishing techniques have survived.
[411] The decline in game and fish population is ascribed to the intro-
[293] duction of guns and snorkels which greatly increased yields for
some years, but then led to a greater scarcity than had ever been
[199] known in the past. Guns and snorkels were introduced shortly after
the second world war.

There are two kinds of domestic livestock: pigs and fowls.
231 The number of pigs has, as I already pointed out, declined greatly
in both villages. It was impossible to know how many pigs were
owned by Sivepe people in 1966-67, because they disappeared as the
old village became deserted and were never seen at all in the new
village. Rimoldi reports 24 pigs owned by his sample of 50 Sivepe
people alone which suggests that even in 1963, when he stayed
there, the whole village must have owned at least 60. During my
period of study, only a few of them were killed, and only when

231 they marauded gardens, so that I assume that a good number could be rounded up if Sivepe were to hold a major feast. They were not at all accessible, however, and none were caught during such hunting [422] expeditions as the people organised. On the occasions when marauding pigs were shot, the pigs were always recognized and presented by the killer to the owner who then presented his pig to some other person. No doubt these pigs were a resource and perhaps I was at fault for not taking a census, but with no pigs visibly in evidence, I considered these assets as too shadowy. In Inonda, where Crocombe and Hogbin reported 12 pigs in 1962, only two were left in 1966.

235 My prognosis for pigs as an economic resource is poor. The fowl [262] population, on the other hand, had remained very much as it was at these earlier investigations: eggs were discovered and eaten occasionally, but the use of the fowl was for feasting when visitors [239] had to be entertained. It was also noticeable that the roosters [293] were deprived of many of their choicest feathers at a time when [411] headdresses had to be refurbished for dancing or spears decorated. At a visit from Togabou, which by traditional etiquette, as I understand it, should have rated at least one pig, the people of [574] Sivepe killed only fowls. This was, I was told, because there were no pigs available; hence the fowls were a proper substitute. It would seem that the fowl is rapidly becoming the substitute for the pig on many ceremonial occasions, though not yet for all occasions.

438 There is a great shortage of both pigs and fowls for these 439 ceremonial occasions. Pigs are bought for high prices ($20 to $30)--from neighboring villages and even, as Crocombe and Hogbin [435] say, from European planters. Fowls tend to be made available on big occasions by whoever has them so that their number does not increase--a few dozen in each of the two villages.

241 We may distinguish, among local plant resources which yield 311 economic products, those plants which are native to the district and those which have been introduced by Europeans for cash cropping purposes. Starting our survey with the former of these two categories, we shall deal first with food plants and next with economic trees. I have tabulated average food plants per household as shown for Rimoldi's Sivepe sample and as shown by Crocombe and Hogbin for Inonda (Table 7).[A] The pattern for the two places is remarkably similar except that sweet potato is a notably more important crop at Inonda than at Sivepe. The reason for this is that it is more dependable under drought conditions such as often occur at Inonda and also, it seems to do better at Inonda. The fact that the Inonda taro acreage is higher than the Sivepe acreage reflects no more than the higher yield per acre in the latter place. There is no evidence that any major change occurred in the quantities grown or the methods of cultivation over the period with which we are concerned, though a small increase in the consumption of Xantosoma taro may be a symptom that people may be starting to

A [See Cat. 116, p. 212--Analyst]

241 devote less time to the cultivation of the more laborious (but more
311 favoured) Colocasia taro.

During the post-eruption period there have been, as we shall
[433] see below, many pressures on the Orokaiva to reallocate their working time, by raising the standard of village building construction, by taking on outside labour to raise taxes and buy luxuries, by increasing the acreage in cash crops. In many cultures dependent on swidden agriculture these pressures have led to more slipshod methods of cultivation, or smaller plantings or shorter fallowing periods. Among the Orokaiva, the only effect so far has been, in all probability, a decline in the surpluses grown for feasts. This is a change to be discussed later and related to religious changes. In Sivepe there would clearly be a danger, if cash-cropping was expanded to the extent some administration officers would like to see, that fallowing periods in subsistence gardens would need to be shortened. There is no evidence that subsistence gardening, so far, has been affected by cash cropping, as both the acreage and the time devoted to cash crops is too small. (For details of time allocation to activities in both villages, see Table 8.)

245 The average Sivepe family, according to Rimoldi, has 62 cultivated trees of local origin from which crops are gathered in season. No corresponding figure is available for Inonda, but it would be about 30. The list of most important trees varies a little between the two districts because of differences of climate and soil.

Sivepe	Inonda
Coconut	Sago
Breadfruit (oga and eumba)	Coconut
Betelnut (areca)	Betelnut
Sago	Hauga nut (tauga)
Pandanus	Breadfruit
Tauga nut (cycas media)	Pandanus
Puga nut (terminalia okaria)	(Ajimo)
Bark cloth tree (ajimo)	
Mango	

An important difference between the resources of the two villages is that coconuts at Inonda will yield copra; hence, a copra drying house was built and this has been and can be a source
● [262] of income. At Sivepe, the flesh is thinner and coconuts are grown for drinking, cooking, feeding dogs and chickens, while the nuts are also eaten regularly and form a useful source of protein. Another
249 difference is that neither betelnut nor tauga and puga do well at all in the Inonda district and quantities are negligible. The lack of betelnuts is felt very strongly, as the Inonda people are as
276 fond of chewing it as other Orokaiva. Hence, it is usually obtained
438 A [See Cat. 116, p. 213--Analyst]

276 439 from relatives who live in the mountain districts or else obtained by barter, or bought from other villages or at the Popondetta market.

Sago is made and eaten when other crops fail, but the plants 245 are also used as building material. As the supply of sago is very [262] limited in both villages, the plants are highly prized. Inonda people owned only 21 trees so that the bulk of supplies was obtained from other areas, e.g., from wild sago trees over which they claim rights. In Sivepe, the total supply is in the vicinity of, probably, 300. This suffices for the local need, both as an occasional supplementation of the food supply and for building, when a great quantity is needed.

[199] The special position of sago among economic trees was shown clearly in Miss White's description of the building of Sasembata mission station shortly after the eruption. This was a big project in which all the surrounding villages (including Sivepe) collaborated. Labour was given free and so were all building materials--apart from sago for which payment was expected and made. I was told by informants this was because sago is a cultivated, not a bush tree. During my field work period, the mission again needed sago roofing for expansion and repair of buildings, but this time no payment was made. However, each household was asked for a contribution of only two strips of roofing. Thus, it was again treated as a resource of special value as other materials were not supplied in such strict rations.

The ajimo tree, used for manufacturing bark cloth was not reported in Inonda by Crocombe and Hogbin but we did find a small [287] quantity growing. Though bark cloth is only used for dancing costumes nowadays, in both villages, these dances still take place from time to time. The women's clubs have stimulated the production of painted bark cloth for sale, but this has not led to extra plantings. Sivepe's supply of ajimo trees was only one or two for most households, sufficient for an occasional festive garment with none to spare, but there was an abundance of ajimo in some other villages in the Sasembata district. Here we may notice a definite change between the pre-eruption period and the present at pre-eruption Inonda and because at Pamba, bark cloth was still the daily wear for everybody, so that the ajimo was an important economic tree. With this exception, there would seem to have been no change in the resources of economic trees of local origin.

241 177 The three introduced cash crops of significance in the two villages have been rice (pre-eruption), coffee and rubber; in both villages, one man grew a little cocoa. These industries, which developed in intensive interaction with Australian authorities, are perhaps better discussed in detail in a later chapter when these [243] relationships are analysed. Rice plots were developed in the period between the second world war and the eruption; the plots in both

177 political and value system modified in only such minor ways that a withdrawal of Australian power at this stage might well lead to a discarding of many of the innovations. Certainly, this is what many of the villagers fear and what makes them distrust any politicians who are pressing for immediate independence.

177 Food: The Orokaiva menu is still basically the same as in the past. Taro forms the mainstay of the meal, with various vegetable relishes, 262 while cooking bananas, sweet potatoes and yams are eaten in significant quantities. Sugar beet, coconut and other nuts supplement the diet. [263] Animal foods are eaten only on special occasions. It is the festive diet that has undergone recent changes: trade salt is almost universally [411] used instead of the native product. Fish and game have become rare as a result of the introduction of guns and snorkels. The government pressure against village pig-keeping has resulted in these becoming rarer also. On the other hand, tins of fish and meat are bought in trade stores and may make up for the loss of fresh animal food. Rice is another introduced food, which was first eaten by members of the Papuan constabulary, and distributed on a small scale when the Allies were fighting the Japanese in the Northern District. The first time that a large group of Orokaiva ate rice as a staple diet was during the period in the camps after the eruption. Today, it is a food bought when there are guests or a celebration. It is then eaten as a [272] side dish, together with taro. Tea and sugar have likewise become [263] favoured at festive meals. Coffee, the main cash crop of the district, is totally unknown as a beverage; cocoa is likewise unknown, except as a plantation crop.

291 Clothing: At the time of the eruption, traditional clothing was 177 universally worn. European clothing was introduced to the villages in the 1950's by young men returning from employment in town. Today, young and old wear European-type clothing except when doing traditional dances. On one occasion a man dressed in full regalia to settle a quarrel with a neighbouring village. This, I was told, added dignity to his embassy. Men wear shirts and shorts; women wear Mother Hubbard type of skirts and blouses, as well as frocks for dressy occasions. Underclothes are not worn, though the Women's Clubs, encouraged by an Australian adviser, have been trying to introduce them. I was told that in Hohorita masculine opposition against this innovation (underclothes for women and children) was quite violent--they ripped them off. This story, however, came from a woman councillor who was not a member of the Sangara tribe. The men wear shirts only when dressed up; normally they are bare above the waist and many of the women likewise, though some of the younger ones affect blouses a good deal of the time, certainly on formal occasions. The causes of this change are not only practise in the schools and mostly in the churches, but also a rather widespread change of fashion. The Anglican Chruch does not stop women from taking communion if they wear nothing above the waist; the pressure is purely one of fashion.

753 of traditional enemies, in territory which had always been regarded
731 as hostile and dangerous. Keesing furthermore reports that "these
mountain people apparently could not conquer a fear of the sea, and
[821] this was reinforced by a rumour that a supernatural "tidal wave" was
to occur along the coast. The camp director told how every night the
more timid scattered on to the higher ground rather than sleep in the
camp on the foreshore."

There is no record that any fears continued after the people were resettled on their own lands. For instance, they ate the products of their land without regard to the fact that they had been scattered by volcanic ash.

164 The abrupt change in diet which occurred in the evacuation
262 camp seems to have had no injurious effects and aroused no great
731 concern. The people liked the rice and meat rations they were given. After awhile they began to long for their own food. Their expeditions to their home villages enabled them to collect at least some taro for themselves.

128 I shall discuss the general health problems of the Orokaiva and government and mission health measure in subsequent chapters.

744 one occasion he did complain about weeds growing in one part of the village; he was also involved in a complaint against two men who were living in condemned houses. The first time I saw him in the village he gave an illustrated lecture on the causes of malaria and methods of malaria control. This was received in much the same spirit as any other metaphysical speculations, which people are not yet ready to share.

There is in progress in the Territory a malaria eradication campaign, for which numerous Papuan technicians have been trained and which involves, i.e., the indoors spraying of villages with DDT. While I did not see any such teams in action, I did notice that anti-malarial injections were standard treatment at the infant health clinic that was held close to Sivepe once a month. Attendance at these clinics was general for all mothers with children of pre-school age. Apart from anti-malarial injections, the nurses offered treatment for sores and other minor ailments; they weighed babies and they took seriously ill young children with them to the hospital. While it was easy to induce mothers to come, it was harder to gain acceptance for Western ideas when these conflicted with Orokaiva ones. This applied especially to child nutrition.

[853] The health authorities had successfully campaigned against the Orokaiva custom of premasticating food given to babies; mothers had stopped doing this, as it was considered uncivilised. On the other hand, nobody obeyed the instruction to wash taro before it was given [824] to babies. The mashing of taro offended the spirit of the taro; it was considered out of the question. An alternative suggestion was to give babies pawpaw, considered by nutritionists to be an excellent [262] baby food. But this food was also avoided by Orokaiva, as it was thought to cause scabies. The result was that Orokaiva babies tended to go through a period of critical malnutrition after weaning and before solid taro can be digested. Our own suggestion to Orokaiva mothers--to go back to premastication--was naturally considered to be no more than a bad joke.

Section 4: Social Services: Education

871 The education system, like the public health system consists
797 of a government sector which is responsible for the bulk of education expenditure and a mission sector which is responsible for the majority of children. In 1965, the mission educated some 65% of the primary school pupils of Papua and over 60% of all pupils. Mission expenditure from its own funds was given in the Territory of Papua Report (1966: 99) as 8.6% of total expenditure on education. In the Northern District, there were four administration primary schools for Papuans (2,403 pupils in 1967) and 54 mission primary schools (8,547 pupils in 1967). The breakdown (see Table 14)[A] shows that schooling generally continues

[A] [See Cat. 116, p. 219--Analyst]

government driver) had gone there and continued at Martyr's school at Sangara. He survived because the mountain erupted during the school holidays. At Sivepa, some children had started going to the Jesembata school, opened in 1945, but attendance was irregular. Nonetheless, there were few people under 30 in 1966, who had not had some schooling.

Goods such as meat, sugar, tobacco were known in Sivepa at the time of the eruption, and bought in trade stores; some people used European pots and others used clay pots. By 1966, all regular production of clay pots in Sivepa had ended; they were not even included ceremonially in bridewealth. It was always the young men, away on labouring jobs, who introduced the innovations in material culture, who brought their mothers and new wives European pots, who came home flaunting European clothes, who first used nails in building their houses. In Inonda, at the time of the eruption, the young men were already wearing "trousers"; in Sivepa, this came later, at the time of the local government council. In both villages, this same association was stressed: the European cloths were accepted for village wear at the time the council started and the example was set not only by the bachelors returning from town but also by the councillors themselves. There was a councillor resident in both villages in the years immediately following 1956; it was their influence that tipped the balance in dress innovation.

At the time of the eruption, cash cropping had not yet started at all in Sivepa, but at Inonda, one man (the father of the present government driver) was already selling coffee for which he was paid $3 per bag by the government. The government also bought copra from him which he prepared by breaking up coconuts and drying them in a fire. He stopped this trade at the time of the eruption but resumed in 1954. In Sivepa, coffee growing started in 1956 on two "company" plots. It was in other words a community activity rather than a case of individual entrepreneurship. Rimoldi (1966: 84) reports that individual coffee gardens started in 1957 only after patrol officers advised against having jointly operated ones.

It is not easy to say just how much linguistic knowledge had been absorbed before the eruption, or even now. If one asks a man what languages he knows, he lists all those he has had contact with on his travels; always Motu, not infrequently Pidgin, and also often an assortment of New Guinea languages marking the spots where he has worked. Wherever a man works, he learns some of the language, but his knowledge rarely passes exacting tests. Orokaiva men who said they knew Aiga could not actually translate the Aiga texts I taped into Orokaiva. It would be most interesting to do research on the actual knowledge of these Papuan polyglots. In a country where so many languages are spoken, communication between persons with different vernacular is a crucial process. There is no doubt that travelling Orokaiva make a great effort to adapt themselves to the regions they visit. If they have personal contact with their employers, they learn a great deal from them too. From the data I have presented it is plain that travel has been the major acculturative influence among the Orokaiva.

or even force Orokaiva settlement patterns from the traditional scattered hamlet system to village or even town living. Another tough question was how far Government should step in to supervise matters of economic and social welfare, including elementary schooling which hitherto policy had left almost wholly to the Anglican Mission. The majority of the mountain Orokaiva are now adherents of this Mission, the only body operating in the area. Questions relating to land tenure, social group realignment, leadership, law and order, and other matters involving local custom had also to be faced, especially in the course of the first experiments in resettlement.[4]

Officials and Mission workers reported that the explanations of the "cause" of the disaster given to them by Orokaiva, were, in general, of a supernatural nature: "God" was punishing them for "sins" such as "not supporting Mission and Government plans for development," "not building new churches as requested by the Bishop," or "not helping the Allies enough during the war." However much these may have pleased the hearers, the fact seems to be that there were resulting strong feelings of insecurity and even of guilt in their retrospective look at the pre-eruption way of life.[5] Officials who know the Orokaiva considered that these feelings undoubtedly helped to foster the extraordinary degree of cooperation and orderliness in situations where large numbers of people were necessarily herded together and shifted around without benefit of the traditional niceties and proprieties.

This raises the whole problem of interpreting the overt events here summarized in terms of their cultural and individual contexts. In discussing theory relating to the dynamics of change and resistance to change, the writer, along with others, has referred elsewhere to the general tendency for peoples to be pre-conditioned by the characteristic sets of their culture and personality norms, to be differentially "adaptable" or responsive to change in the face of new experiences.[6] The impression gained in this case is that subject to inevitable factors of shock and disorganization, the Orokaiva were culturally predisposed to respond to the traumatic experience here described with something approaching maximum adaptability.

The mountain Orokaiva are shifting cultivators, and supplement their staple food, taro, with sweet potato, yam, banana and sugar cane. Flesh from domestic pigs, chickens, dogs, and wild game is what Williams calls "a dainty rather than a diet." "Fresh ground," says this ethnographer, "is continually cleared for new plantings" in the typical pattern

4. These matters are discussed particularly by C. S. Belshaw, an anthropologist working in Papua under the auspices of the Australian National University Research School of Pacific Studies, as a result of a visit to the area in April, 1951; see his "Social Consequences of the Mount Lamington Eruption," *Oceania*, 21, 4, pp. 241-252 (1951). This article was not seen until after the first draft of this paper was completed, and as the approach is considerably different the two papers are complementary rather than unduly overlapping.

5. Belshaw, *op. cit.*, p. 242, stresses this "guilt" factor.

6. F. J. Keesing, "Some Notes on Acculturation Study," Sixth Pacific Science Congress, *Proceedings*, IV, pp. 59-63 (Berkeley, 1940); "Cultural Dynamics and Administration," Seventh Pacific Science Congress, *Proceedings*, 14 pp., mimeographed (New Zealand, 1949).

26: Schwimmer E-5 (1966-1970) 1974
OJ23 Orokaiva OJ23

Orokaiva marriage (Schwimmer, 1970) and have shown that sister-exchange marriage, though infrequent, is regarded as the ideal form. Elopement and abduction marriages, once the most frequent, are now frowned upon, though elopement is still prevalent. The patrilateral preference rule (marrying out a girl in her mother's village) is still regularly stated by informants. In my records, which go back to the third generation, I found that 35% of the resident married women had been married out by that rule for the whole three generations, i.e., they had been exchanged for their mothers and their mothers for their grandmothers.

In the study [3] that follows, I shall first present data concerning the coconut and areca, then about the taro. I shall follow this presentation with a brief discussion about the relation between the levels of myth and ritual.

I. COCONUT AND ARECA

A salient characteristic of the ethnobotany of the Orokaiva is the classification of plants as masculine and feminine. Certain important cultivars are grouped together as opposite-sex couples and grown in close association with one another. Claims are made that such plants will not prosper unless they are planted close together and that, in their wild state, they are also found together.

The symbolic association of these pairs of plants may be based on a number of shared characteristics: the similar outward appearance of the fruit, a coincidence in the time of fruiting, and similarities in culinary use, taste, and supposed physiological effects of the fruit when eaten. Sometimes the pairs of plants are linked in ritual use and in a common myth.

Coconut and areca are planted together in villages as well as gardens. Both nuts are eaten raw between meals; both grow on palms; both are offered to visitors—the coconut as refreshment immediately upon arrival and the areca (along with *hingi* pepper and lime) for chewing during the conversation. At mortuary feasts coconut and areca are the principal gifts, offered in large quantities to guests from villages who helped to bury

26: Schwimmer E-5 (1966-1970) 1974
OJ23 Orokaiva OJ23

the dead person. At ordinary harvest feasts and bride-wealth payments they are seen on display platforms along with taro and other vegetables. They are then subsidiary to taro and pigs, which are the main food gifts, but at mortuary feasts vast quantities are given, saved from the dead man's palms, which are made taboo until this feast. Dry coconut and areca are strewn on graves by affines of the deceased.

The distinctive features perceived by Orokaiva in each species should also be summarized. Coconut is believed to be a valuable adjunct to the diet of children and dogs (also chickens). In Orokaiva myths, its miraculous effect on children and dogs is often described. To the scientific observer this effect is natural enough as coconut is an important source of first-class protein for both children and dogs, who otherwise do not get much first-class protein. Coconut oil is used as a cosmetic for hair and body not only to enhance beauty but also for its magical efficacy, for the purification of man-slayers (Williams, 1930: 175, 207), and for women who are being initiated or who welcome visitors at dances. In all such cases it is the task of a male to pour the coconut milk over the persons whose magical protection is intended.

Areca, a mildly hallucinogenic fruit, is chewed by women as much as by men. When friends are sitting together, it is shared in much the same way as beer among white Australians. People offer nuts to each other but expect to come out approximately even. Visitors from other villages expect to be offered areca by their hosts. Its main physiological effect is to create a dreamy amiability and to break down hostility that might otherwise exist. Its magical uses, mostly in association with some medicine of more specific purpose, are too many to enumerate. A girl carries a bunch of areca at the ceremony which ends her seclusion after first menstruation. She normally offers it to her man at lovers' meetings.

Although I have a number of coconut and areca myths on record, I shall discuss here only one, the fullest one, which illustrates my argument most clearly. A beautiful girl, noted for her remarkable breasts, had the misfortune of killing all the young men with whom she slept. Her breasts pricked and killed them.

5: Schwimmer E-4,5 (1966-1967) 1973
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Mountain Orokaiva

Though Monckton reports (1921) a few large villages in the early post-contact period, it is only recently, in response to Australian pressure, that multi-clan villages, with populations ranging from 100 to 500, have become common. Most of the plantations found in the Northern district have been established by Australian ex-servicemen supported by government loans. A number of Orokaiva have been drawn to work on these plantations, others to jobs in Popondetta, others again to service with the police, the armed forces or employers outside the district. Such migration has substantially reduced the proportion of the male village population group.[2]

2. *Technology and Aesthetics*

We possess only the briefest description of Orokaiva industry (in Williams 1930). Although I did collect additional data, the traditional technology has been transformed to such an extent that my data must needs be fragmentary. The only axes and adzes now in use are made of steel; most of the various stone-made cutting tools described by Williams are no longer in use, being replaced by the ubiquitous bush knife wielded by young and old, male and female. One exception is worth noting, if only to emphasise an element of continuity: cockle shells are still used for the scraping of coconuts and for the shaping and decorating of pots. Most of the needles used by women are still made of flying fox bones (*poma*), even though a few needles have at times been obtained from the Mission. While files for sharpening tools are necessarily made of steel, rough leaves still serve as tools for scraping pots, smoothing down wood, etc. The same mixture in the use of basic tools is found in agriculture, hunting, and fishing: we still find the digging stick but also the axe; traditional hand nets and fishing spears (with steel tips), but also snorkels. For hunting, traditional devices have been almost entirely replaced by the shot gun. The old technology is still basically intact in those few industries which are directly related to ceremonial life: the making and decorating of loin cloths, feather headdresses, ceremonial weaponry, musical instruments such as drums. Certain other specifically feminine artifacts (mats, baskets, string bags) are still produced and in use, while much of the contemporary Orokaiva house-building technology is traditional, Fine wickerwork for ceremonial objects (armlets, spear decorations, etc.) is still made by some of the older men. Orokaiva women have almost stopped making pots, though this was an important industry in pre-contact times. While trade goods are used for everyday purposes, such pots as are still made serve as gifts to women at the time of marriage. They are kept for sentimental reasons, but we were able to see only very few.

An everyday Orokaiva meal consists of taro, often with a few vegetable condiments: coconut milk, cordyline tips, or edible pitpit,[3] or one of a number of herbs, sometimes of supposed medicinal value. Much care is devoted to the cooking of the taro and variety is provided partly by a choice from many varieties of taro growing in most gardens. In the dry season, any of a number of subsidiary foods (sweet potato, German taro, yam, banana, breadfruit and several others) may be added to make the taro stretch further. Meat or fish is eaten only rarely, usually on festive occasions. Foods like tea, sugar, bread and salt are also reserved for such occasions. Although several traditional methods of

5: Schwimmer E-4,5 (1966-1967) 1973
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making salt were described to me, the housewife depends mainly on trade salt. Meals never consist of more than one course. Plates, forks and spoons are owned by all households but people do not always use them. While boiling is the most common way of preparing food, bananas, yams and breadfruit are usually roasted. Meat is often preserved by daily smoking, sometimes for long periods. There is a rule against eating meat 'in lent' and this is kept very strictly, but probably for traditional religious reasons to be discussed later. The main drink with meals is a soup consisting of the water in which the vegetables and herbs were cooked.

Foraging. A good deal of plant and animal food is obtained from foraging, especially in the tropical rain forest which covers most of the Northern District. Among foraged animal foods I would mention especially grubs, frogs, snails, rats, bush eggs and lice. Foraged plant foods are especially valued during the dry season when roots, leaves and fern fronds may make up part of a meal. Savoury herbs and leaves, however, are collected at all times of the year. Some food plants, though growing in the forest, are owned by individuals so that the gathering of these plants may be better described as harvesting than collecting. The most important are the *tauga* and *puga* nut, sago, breadfruit, wild fig, and fruiting pandanus.[4]

Hunting. According to Waddell and Krinks, about two man-hours weekly are spent on hunting (3.7 hours by men and 0.3 hours by women). Hunting patterns on the Mount Lamington foothills differ widely from those on the alluvial plains where kunai grass is widespread. On the foothills, there is hunting in reverted gardens and in very limited areas of virgin bush. The usual quarry consists of small marsupials and birds. If a pig is encountered, it is invariably a village pig whose owner has a claim to the carcase. The game population was virtually exterminated after the introduction of guns in the 1950s. In the kunai country, on the other hand, hunting land is abundant. The technique is by firing the kunai so that the animals can be shot when they escape. Such a hunt requires a large number of men who ring the burnt-over area. Not only marsupials but also pigs are killed, either by gunfire or by being roasted alive in the kunai grass. By no means all animals killed in the fire are retrieved. Fires tend to get out of hand and to spread over surrounding bush land which then is often covered with kunai grass and so is useless for purposes of cultivation.

Fishing. The supply of fish has suffered greatly with the introduction of snorkels after the Second World War, as this equipment enabled the Orokaiva to fish out their rivers almost completely in a very short time. Fish is still an important resource, however, in the lower reaches of the huge rivers which run through the Northern District: Kumusi, Ambogo, Girua, Sambogo, etc. In Inonda, the village studied by Crocombe and Hogbin (1963) and Waddell and Krinks (1968), 3.8 man hours per week are spent on fishing, mostly with spears, and the product is used not only for consumption but also for trade. (Inonda people also trade meat and bush eggs.) Many of the villages near the mountain, such as Sivepe, have very little fish. Apart from a few eels and crabs, the rivers contained a small supply of two-inch-long fishes caught in April with a small hand-net used as a scoop. (See Williams 1930:53 for description.)

Animal Husbandry. There are three kinds of domestic livestock: pigs, dogs and fowls. Every man still has one or more small dog which he uses for hunting

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